

J.0 APPENDIX J - PARTICULATE SAMPLER OPERATION

The 2000 FRM and 2025 FRM particulate samplers, used for $PM_{2.5}$, PM_{10} , PM_{coarse} , and Lead monitoring, are operated on a 3 day schedule (except co-located QC samplers, some PM_{10} Samplers and Lead Samples - 6 day) as described below.

J.1 Sample Setup

Before midnight of the day that the sampler is to run and after the end of the previous run the sampler operator should visit the sampler and prepare for the next run. Before this time the filter(s) for the next run should have been delivered to the operator.

- 1) Retrieve any exposed filters as described below and perform any maintenance or QC functions required before setting up for the next sample run. When retrieving Lead samples use Nitrile gloves.
- 2) Unpack and inspect the filter for abnormalities such as pin holes. If there is something wrong with the filter do not use it and contact a Field Manager immediately. If you have a spare unexposed filter that is not over 1 month old use it instead of the abnormal one. The expiration date for the filter is written on the outside of the filter shipping bag.
- 3) Compare the filter number on the filter's can with the pre-labeled sampling form to ensure that they are the same. If so, check the box next to the filter number. If not, write the correct number in the space provided. Fill in the cassette number on the form. This number is located on the bottom of the filter cassette on the stainless steel support screen. Check the start/stop date and time on the form. If it is correct place a check in the box next to it. If not, write the start/stop date and time in the space provided on the form. Check the site description on the form to make sure it is correct. If not, strike thru it and write the correct site description on the form. Fill in the remaining fields in the sample setup portion of the sampling form. Lead samples are not placed in a can, they are covered with a hard plastic cap and placed in a thick plastic bag.
- 4) Open the sample holder and place the sample filter cassette on the sampling bench with the filter side up (white side up - stainless steel side down) and close the holder.
- 5) A) Program the start/end date and start/end time for the filter and enter the filter number and cassette number into the sampler. To do this, from the "Main Screen" in **STOP** mode press **F1** ("FiltSet"). While on this "Filter Setup" screen, press **F1** ("Edit") and, using the arrow keys, move to the appropriate fields for entering the information. The filter number should be put in the "ID1" field and the cassette number in the "ID2" field. When all information is put in press the **ENTER** key. This will update the information in the sampler. If you must change any information you will have to press the **F1** key again to enter "Edit" mode before you can change the information. Return to the "Main Screen" by pressing **ESC**. When setting up Lead samples use Nitrile gloves provided by the lab.

5) B) To input sample information on a 2000i sampler, press the second softkey (with SSET displayed above). Scroll down to the sample and press **ENTER**. Select the Sample Start Time and press **ENTER**. Use the arrow keys to adjust the start date and time, then select Save and press **ENTER**. Press **MENU** to return to the Sample screen. If the Sample End Time and Duration are not correct, adjust them in the same manner. Select Filter ID and press **ENTER**. Use the arrow keys to input the correct ID, and then press **ENTER** to save. Input the Cassette ID the same way.

6) Press **RUN** and you should see that the sampler enters "Wait" mode (On the 2000i sampler, press **RUN** twice and it will ask you to press the **RIGHT** arrow to confirm entering Sample Mode). It will wait until the start date/time and then should start sampling. If the sampler does not enter "Wait" mode, or you have other problems, you may need to reset status codes caused from a previous error. See the "Sample Retrieval" procedure for more information.

J.2 Sample Retrieval

The particulate sample should be retrieved from the sampler within 4 days of the end of the sample run as described below.

1) Check that the sample run was completed successfully. If the "Mode" (upper right of "Main Screen") is "Done" and the "Stat" code (upper left) is "OK" then the sampling was successful. If not, write the "Stat" code, and any other information relevant to the error, in the comments section of the sampling form.

2) Press **F4** (or **RUN** key, followed by **RIGHT** arrow on 2000i) to place the sampler in **STOP** mode.

3) Fill in the sample retrieval section of the sampling form by pressing **F3** ("Data") and writing down the information from this screen on the form. Press **ESC** to return to the "Main Screen".

Sample records from the 2000i are viewed from Main Menu > View Records (or by the third softkey, RECS) and selecting Filter record. Use the left and right arrow to change between Time, Filter, and Ambient Screens. Use the up and down arrows to change between records. **Make sure the sampling date of the record you view matches that on the form.**

4) Open the sampler's sample cassette holder and remove the exposed sample filter cassette from the sampling bench. Inspect the filter for abnormalities such as tears or holes. Note any abnormalities in the comment section of the sampling form. Place the sample back in its canister and then in its shipping bag.

5) Perform any maintenance or QC functions, such as verifications now before loading the next sample.

J.3 Sample Storage / Transport

If the sample(s) is not transported directly to the ADEQ laboratory by the operator it should be stored at near 4 °C in a refrigerator in its can and sample bag along with the sampling form.

Send samples to the laboratory every 2 weeks, preferably on a Monday or Tuesday, using the styro-foam shipping container / box supplied for that purpose as described below. Alternatively, the samples may be transported directly to the laboratory without using the process described below so long as they are not exposed to high temperatures such as in a closed automobile.

- 1) At least **2 days** (48 hours) prior to shipping the filters to the laboratory, place the "blue ice" bags from the shipping container in a freezer. You may place the whole container with bags in the freezer if there is sufficient space. If these "blue ice" bags are not completely frozen they probably will not maintain the 4 °C desired during transport, especially in the summer.
- 2) Immediately prior to shipping the samples, remove the shipping container / "blue ice" bags from the freezer and place the samples (in their bags with their sampling forms) in the container in the middle of the "blue ice" bags. Put the lid on the container and put it in the shipping box (if it was removed) and affix the pre-paid postage to the box.
- 3) Mail the samples at any convenient United States Post Office, preferably on a Monday or Tuesday. Doing so will usually result in arrival of the samples before the weekend.
- 4) Lead samples will be retrieved by Technical Services Air Lab, placed in a slide, weighed, and will be shipped Quarterly to RTI.